

I/We Claim:

1. A device for detecting an analyte comprising an analyte-specific compound that binds to the analyte and produces a detectable compound in combination with a given substrate, said detectable compound producing a response when exposed to at least two dyes, the response being stronger and more distinct than a response of the analyte when exposed to the at least two dyes.

2. The device of claim 1, wherein the analyte-specific compound is chemically coupled to an enzyme.

3. The device of claim 2, further comprising a substrate that chemically reacts with the enzyme to produce the detectable compound.

4. The device of claim 1, wherein the detectable compound that is produced is ammonia.

5. The device of claim 1, wherein the analyte-specific compound is selected from the group consisting of an antibody, protein, biotin, peptide, hapten, specific drug analyte or drug metabolite, carbohydrate moiety, or single stranded or double stranded nucleic acid or from fusion or chimeric molecules comprising structural elements of two or more of these group members such as combinations of nucleic acid and protein or protein and small organic molecules or the like.

6. The device of claim 1, wherein the analyte-specific compound is selected from the group consisting of single stranded nucleic acid and double stranded nucleic acid.

7. The device of claim 6, wherein the single stranded nucleic acid and double stranded nucleic acid is selected from the group consisting of RNA, DNA, base-modified oligonucleotide, chimeric oligonucleotide, amplification reaction product, and cDNA of any length or sequence.

8. The device of claim 2, wherein the enzyme is urease.
9. The device of claim 3, wherein the substrate is urea.
10. The device of claim 8, wherein the substrate is urea.
11. The device of claim 1, further comprising a free enzyme that facilitates the production of the detectable compound.
12. The device of claim 1, further comprising free enzyme and enzyme that is chemically coupled to the analyte-specific compound, wherein each form of enzyme facilitates the production of the detectable compound.
13. The device of claim 1, further comprising at least two dyes that undergo a detectable color change when exposed to the detectable compound.
14. The device of claim 2, wherein the enzyme is placed on a solid support.
15. The device of claim 14, wherein the solid support is selected from the group consisting of a membrane, filter, tube, and well.
16. The device of claim 15, wherein the solid support is made from material comprised of polystyrene or polypropylene.
17. The device of claim 2, wherein the enzyme is in an aqueous or organic solution.
18. The device of claim 13, wherein the at least two dyes are selected from the group consisting of:
2,3,7,8,12,13,17,18,-octafluoro-5,10,15,20-tetrakis (pentafluorophenyl)
porphyrinatocobalt (II) [Co(F₂₈TPP)];

2,3,7,8,12,13,17,18,-octabromo-5,10,15,20-tetraphenylporphiratozinc(II)
[Zn(Br₈TPP)];

5,10,15,20-tetraphenylporphiratozinc(II) [ZnTPP];

5(phenyl)-10,15,20-trikis(2',6'-disilyloxyphenyl)porphyrinatozinc(II) [Zn(Si₆PP)];

5,10,15,20-Tetraphenyl-21*H*,23*H*-porphine [H₂TPP];

Thymol Blue; Cresol Red; Phenol Red; Bromothymol Blue; Nitrazine Yellow;
Bromocresol Purple; and Bromocresol Green.

19. The device of claim 1, wherein the analyte is selected from the group consisting of an antibody, protein, biotin, peptide, hapten, specific drug analyte or drug metabolite, carbohydrate moiety, or single stranded or double stranded nucleic acid or from fusion or chimeric molecules comprising structural elements of two or more of these group members such as combinations of nucleic acid and protein or protein and small organic molecules or the like.

20. The device of claim 1, wherein the analyte is selected from the group consisting of single stranded nucleic acid and double stranded nucleic acid.

21. The device of claim 20, wherein the single stranded nucleic acid and double stranded nucleic acid is selected from the group consisting of RNA, DNA, base-modified oligonucleotide, chimeric oligonucleotide, amplification reaction product, and cDNA of any length or sequence.

22. A device for detecting an analyte comprising an analyte-specific compound that chemically couples to the analyte and produces a detectable compound, said detectable compound producing a response when exposed to at least two dyes, the response being stronger and more distinct than a response of the analyte when exposed to the at least two dyes.

23. The device of claim 22, wherein the analyte is an enzyme.

24. The device of claim 23, wherein the analyte-specific compound is a substrate.
25. The device of claim 22, wherein the analyte is urease.
26. The device of claim 22, wherein the analyte-specific compound is urea.
27. The device of claim 22, wherein the detectable compound that is produced is ammonia.
28. The device of claim 27, wherein the ammonia is indicative of urease activity in a biological or chemical sample.
29. The device of claim 28, wherein the biological or chemical sample is a bodily fluid or tissue of a patient.
30. The device of claim 29, wherein the bodily fluid of a patient is selected from the group consisting of breath, belch gas, phlegm, urine, feces, blood, saliva, and sweat.
31. The device of claim 29, wherein the tissue is obtained via swab or biopsy.
32. A device for detecting an analyte comprising an analyte-specific compound conjugated to an enzyme, the analyte-specific compound binding to a target site of the analyte, the enzyme producing a detectable compound in combination with a given substrate, the detectable compound producing a detectable response when exposed to at least two dyes, the response being stronger and more distinct than a response of the analyte when exposed to the at least two dyes.
33. The device of claim 32, further comprising a capture analyte-specific compound that is different from the conjugated analyte-specific compound, the capture analyte-specific compound binding to a different target site of the analyte than the conjugated analyte-specific compound.

34. The device of claim 33, wherein the capture analyte-specific compound is bound directly or indirectly to a solid support.

35. A device for detecting an analyte comprising an analyte-specific compound that binds to a target site of the analyte, a conjugate comprising an enzyme and a non-analyte specific compound, the non-analyte specific compound that binds to the analyte-specific compound, the enzyme producing a detectable compound in combination with a given substrate, the detectable compound producing a detectable response when exposed to at least two dyes, the response being stronger and more distinct than a response of the analyte when exposed to the at least two dyes.

36. The device of claim 35, further comprising a capture analyte-specific compound that is different from the analyte-specific compound, the capture analyte-specific compound binding to a different target site of the analyte than the analyte-specific compound.

37. The device of claim 36, wherein the capture analyte-specific compound is bound directly or indirectly to a solid support.

38. A device for detecting an analyte in a sample comprising a receptor molecule for capturing either the free analyte from the sample, or a tracer not from the sample, the tracer comprising an analyte molecule bound to an enzyme, the tracer producing a detectable compound in combination with a given substrate, the detectable compound producing a detectable response when exposed to at least two dyes, the detectable response inversely proportional to the quantity of the analyte in the sample.

39. The device of claim 22, further comprising at least two dyes that undergo a detectable color change when exposed to the detectable compound.

40. The device of claim 39, wherein the at least two dyes are selected from the group consisting of:

2,3,7,8,12,13,17,18,-octafluoro-5,10,15,20-tetrakis (pentafluorophenyl)
porphyrinatocobalt (II) [Co(F₂₈TPP)];

2,3,7,8,12,13,17,18,-octabromo-5,10,15,20-tetraphenylporphyrinatozinc(II)
[Zn(Br₈TPP)];

5,10,15,20-tetraphenylporphyrinatozinc(II) [ZnTPP];

5(phenyl)-10,15,20-trikis(2',6'-disilyloxyphenyl)porphyrinatozinc(II) [Zn(Si₆PP)];

5,10,15,20-Tetraphenyl-21*H*,23*H*-porphine [H₂TPP];

Thymol Blue; Cresol Red; Phenol Red; Bromothymol Blue; Nitrazine Yellow;
Bromocresol Purple; and Bromocresol Green.

41. The device of claim 32, further comprising at least two dyes that undergo a detectable color change when exposed to the detectable compound.

42. The device of claim 41, wherein the at least two dyes are selected from the group consisting of:

2,3,7,8,12,13,17,18,-octafluoro-5,10,15,20-tetrakis (pentafluorophenyl)
porphyrinatocobalt (II) [Co(F₂₈TPP)];

2,3,7,8,12,13,17,18,-octabromo-5,10,15,20-tetraphenylporphyrinatozinc(II)
[Zn(Br₈TPP)];

5,10,15,20-tetraphenylporphyrinatozinc(II) [ZnTPP];

5(phenyl)-10,15,20-trikis(2',6'-disilyloxyphenyl)porphyrinatozinc(II) [Zn(Si₆PP)];

5,10,15,20-Tetraphenyl-21*H*,23*H*-porphine [H₂TPP];

Thymol Blue; Cresol Red; Phenol Red; Bromothymol Blue; Nitrazine Yellow; Bromocresol Purple; and Bromocresol Green.

43. The device of claim 35, further comprising at least two dyes that undergo a detectable color change when exposed to the detectable compound.

44. The device of claim 43, wherein the at least two dyes are selected from the group consisting of:

2,3,7,8,12,13,17,18,-octafluoro-5,10,15,20-tetrakis (pentafluorophenyl) porphirinatocobalt (II) [Co(F₂₈TPP)];

2,3,7,8,12,13,17,18,-octabromo-5,10,15,20-tetraphenylporphirinatozinc(II) [Zn(Br₈TPP)];

5,10,15,20-tetraphenylporphirinatozinc(II) [ZnTPP];

5(phenyl)-10,15,20-trikis(2',6'-disilyloxyphenyl)porphyrinatozinc(II) [Zn(Si₆PP)];

5,10,15,20-Tetraphenyl-21*H*,23*H*-porphine [H₂TPP];

Thymol Blue; Cresol Red; Phenol Red; Bromothymol Blue; Nitrazine Yellow; Bromocresol Purple; and Bromocresol Green.

45. The device of claim 38, further comprising at least two dyes that undergo a detectable color change when exposed to the detectable compound.

46. The device of claim 45, wherein the at least two dyes are selected from the group consisting of:

2,3,7,8,12,13,17,18,-octafluoro-5,10,15,20-tetrakis (pentafluorophenyl)
porphyrinatocobalt (II) [Co(F₂₈TPP)];

2,3,7,8,12,13,17,18,-octabromo-5,10,15,20-tetraphenylporphyrinatozinc(II)
[Zn(Br₈TPP)];

5,10,15,20-tetraphenylporphyrinatozinc(II) [ZnTPP];

5(phenyl)-10,15,20-trikis(2',6'-disilyloxyphenyl)porphyrinatozinc(II) [Zn(Si₆PP)];

5,10,15,20-Tetraphenyl-21*H*,23*H*-porphine [H₂TPP];

Thymol Blue; Cresol Red; Phenol Red; Bromothymol Blue; Nitrazine Yellow;
Bromocresol Purple; and Bromocresol Green.

47. A method for detecting an analyte comprising the steps of:

- a) exposing an analyte-specific compound to an analyte;
- b) producing a detectable compound; and
- c) exposing the detectable compound to at least two dyes to produce a response, the response being stronger and more distinct than a response of the analyte when exposed to the at least two dyes.

48. A method for detecting an analyte comprising the steps of:

- a) exposing an analyte-specific compound to an analyte; and
- b) producing a detectable compound, in combination with a given substrate, said detectable compound producing a response when exposed to at least two dyes, the response being stronger and more distinct than a response of the analyte when exposed to the at least two dyes.

49. A method for detecting an analyte comprising the steps of:

- a) exposing the analyte to a conjugate, the conjugate comprising an analyte-specific compound conjugated to an enzyme;
- b) exposing the conjugate to a given substrate to produce a detectable compound, the detectable compound producing a detectable response when exposed to at least two dyes, the response being stronger and more distinct than a response of the analyte when exposed to the at least two dyes.

50. The method of claim 49, further comprising the step of removing unbound material prior to step b).

51. A method for detecting an analyte comprising the steps of:

- a) exposing the analyte to an analyte-specific compound;
- b) exposing the analyte-specific compound to a conjugate comprising an enzyme and a non-analyte specific compound, the non-analyte specific compound binding to the analyte-specific compound; and
- c) exposing the enzyme to a given substrate to produce a detectable compound, the detectable compound producing a detectable response when exposed to at least two dyes, the response being stronger and more distinct than a response of the analyte when exposed to the at least two dyes.

52. The method of claim 51, further comprising the step of removing unbound material prior to steps b) and c).

53. The device of claim 2, wherein the enzyme that is chemically coupled to the analyte-specific compound is directly coupled to the analyte-specific compound.

54. The device of claim 2, wherein the enzyme that is chemically coupled to the analyte-specific compound is indirectly coupled to the analyte-specific compound.

55. The device of claim 12, wherein the enzyme that is chemically coupled to the analyte-specific compound is directly coupled to the analyte-specific compound.

56. The device of claim 12, wherein the enzyme that is chemically coupled to the analyte-specific compound is indirectly coupled to the analyte-specific compound.

57. The device of claim 23, wherein the enzyme directly couples to the analyte-specific compound.

58. The device of claim 23, wherein the enzyme indirectly couples to the analyte-specific compound.

59. The device of claim 32, wherein the enzyme directly couples to the analyte-specific compound.

60. The device of claim 32, wherein the enzyme indirectly couples to the analyte-specific compound.

61. The device of claim 35, wherein the enzyme directly couples to the non-analyte specific compound.

62. The device of claim 35, wherein the enzyme indirectly couples to the non-analyte specific compound.

63. The device of claim 38, wherein the enzyme directly couples to the analyte molecule of the tracer.

64. The device of claim 38, wherein the enzyme indirectly couples to the analyte molecule of the tracer.

65. The method of claim 49, wherein the enzyme directly couples to the analyte-specific compound.

66. The method of claim 49, wherein the enzyme indirectly couples to the analyte-specific compound.

67. The method claim 51, wherein the enzyme directly couples to the non-analyte specific compound.

68. The device of claim 51, wherein the enzyme indirectly couples to the non-analyte specific compound.

69. A device for detecting an analyte comprising an analyte-specific compound that binds to the analyte and produces a detectable compound in combination with a given substrate, said detectable compound producing a response when exposed to at least one porphyrin dye, the response being stronger and more distinct than a response of the analyte when exposed to the at least one porphyrin dye.

70. The device of claim 69, wherein the analyte-specific compound is chemically coupled to an enzyme.

71. The device of claim 70, further comprising a substrate that chemically reacts with the enzyme to produce the detectable compound.

72. The device of claim 69, wherein the detectable compound that is produced is ammonia.

73. The device of claim 69, wherein the analyte-specific compound is selected from the group consisting of an antibody, protein, biotin, peptide, hapten, specific drug analyte or drug metabolite, carbohydrate moiety, or single stranded or double stranded nucleic acid or from fusion or chimeric molecules comprising structural elements of two or more of these group members such as combinations of nucleic acid and protein or protein and small organic molecules or the like.

74. The device of claim 69, wherein the analyte-specific compound is selected from the group consisting of single stranded nucleic acid and double stranded nucleic acid.

75. The device of claim 74, wherein the single stranded nucleic acid and double stranded nucleic acid is selected from the group consisting of RNA, DNA, base-modified oligonucleotide, chimeric oligonucleotide, amplification reaction product, and cDNA of any length or sequence.

76. The device of claim 70, wherein the enzyme is urease.

77. The device of claim 71, wherein the substrate is urea.

78. The device of claim 76, wherein the substrate is urea.

79. The device of claim 69, further comprising a free enzyme that facilitates the production of the detectable compound.

80. The device of claim 69, further comprising free enzyme and enzyme that is chemically coupled to the analyte-specific compound, wherein each form of enzyme facilitates the production of the detectable compound.

81. The device of claim 69, further comprising at least one porphyrin dye that undergoes a detectable color change when exposed to the detectable compound.

82. The device of claim 70, wherein the enzyme is placed on a solid support.

83. The device of claim 82, wherein the solid support is selected from the group consisting of a membrane, filter, tube, and well.

84. The device of claim 83, wherein the solid support is made from material comprised of polystyrene or polypropylene.

85. The device of claim 70, wherein the enzyme is in an aqueous or organic solution.

86. The device of claim 81, wherein the at least one porphyrin dye is selected from the group consisting of:

2,3,7,8,12,13,17,18,-octafluoro-5,10,15,20-tetrakis (pentafluorophenyl)
porphyrinatocobalt (II) [Co(F₂₈TPP)];

2,3,7,8,12,13,17,18,-octabromo-5,10,15,20-tetraphenylporphirinatozinc(II)
[Zn(Br₈TPP)];

5,10,15,20-tetraphenylporphirinatozinc(II) [ZnTPP];

5(phenyl)-10,15,20-trikis(2',6'-disilyloxyphenyl)porphyrinatozinc(II) [Zn(Si₆PP)]; and

5,10,15,20-Tetraphenyl-21*H*,23*H*-porphine [H₂TPP].

87. The device of claim 69, wherein the analyte is selected from the group consisting of an antibody, protein, biotin, peptide, hapten, specific drug analyte or drug metabolite, carbohydrate moiety, or single stranded or double stranded nucleic acid or from fusion or chimeric molecules comprising structural elements of two or more of these group members such as combinations of nucleic acid and protein or protein and small organic molecules or the like.

88. The device of claim 69, wherein the analyte is selected from the group consisting of single stranded nucleic acid and double stranded nucleic acid.

89. The device of claim 88, wherein the single stranded nucleic acid and double stranded nucleic acid is selected from the group consisting of RNA, DNA, base-modified oligonucleotide, chimeric oligonucleotide, amplification reaction product, and cDNA of any length or sequence.

90. A device for detecting an analyte comprising an analyte-specific compound that chemically couples to the analyte and produces a detectable compound, said detectable compound producing a response when exposed to at least one porphyrin dye, the response being stronger and more distinct than a response of the analyte when exposed to the at least one porphyrin dye.

91. The device of claim 90, wherein the analyte is an enzyme.

92. The device of claim 91, wherein the analyte-specific compound is a substrate.

93. The device of claim 90, wherein the analyte is urease.
94. The device of claim 90, wherein the analyte-specific compound is urea.
95. The device of claim 90, wherein the detectable compound that is produced is ammonia.
96. The device of claim 97, wherein the ammonia is indicative of urease activity in a biological or chemical sample.
97. The device of claim 96, wherein the biological or chemical sample is a bodily fluid or tissue of a patient.
98. The device of claim 97, wherein the bodily fluid of a patient is selected from the group consisting of breath, belch gas, phlegm, urine, feces, blood, saliva, and sweat.
99. The device of claim 97, wherein the tissue is obtained via swab or biopsy.
100. A device for detecting an analyte comprising an analyte-specific compound conjugated to an enzyme, the analyte-specific compound binding to a target site of the analyte, the enzyme producing a detectable compound in combination with a given substrate, the detectable compound producing a detectable response when exposed to at least one porphyrin dye, the response being stronger and more distinct than a response of the analyte when exposed to the at least one porphyrin dye.
101. The device of claim 100, further comprising a capture analyte-specific compound that is different from the conjugated analyte-specific compound, the capture analyte-specific compound binding to a different target site of the analyte than the conjugated analyte-specific compound.

102. The device of claim 101, wherein the capture analyte-specific compound is bound directly or indirectly to a solid support.

103. A device for detecting an analyte comprising an analyte-specific compound that binds to a target site of the analyte, a conjugate comprising an enzyme and a non-analyte specific compound, the non-analyte specific compound that binds to the analyte-specific compound, the enzyme producing a detectable compound in combination with a given substrate, the detectable compound producing a detectable response when exposed to at least one porphyrin dye, the response being stronger and more distinct than a response of the analyte when exposed to the at least one porphyrin dye.

104. The device of claim 103, further comprising a capture analyte-specific compound that is different from the analyte-specific compound, the capture analyte-specific compound binding to a different target site of the analyte than the analyte-specific compound.

105. The device of claim 104, wherein the capture analyte-specific compound is bound directly or indirectly to a solid support.

106. A device for detecting an analyte in a sample comprising a receptor molecule for capturing either the free analyte from the sample, or a tracer not from the sample, the tracer comprising an analyte molecule bound to an enzyme, the tracer producing a detectable compound in combination with a given substrate, the detectable compound producing a detectable response when exposed to at least one porphyrin dye, the detectable response inversely proportional to the quantity of the analyte in the sample.

107. The device of claim 90, further comprising at least one porphyrin dye that undergoes a detectable color change when exposed to the detectable compound.

108. The device of claim 107, wherein the at least one porphyrin dye is selected from the group consisting of:

2,3,7,8,12,13,17,18,-octafluoro-5,10,15,20-tetrakis (pentafluorophenyl) porphyrinatocobalt (II) [Co(F₂₈TPP)];

2,3,7,8,12,13,17,18,-octabromo-5,10,15,20-tetraphenylporphyrinatozinc(II) [Zn(Br₈TPP)];

5,10,15,20-tetraphenylporphyrinatozinc(II) [ZnTPP];

5(phenyl)-10,15,20-trikis(2',6'-disilyloxyphenyl)porphyrinatozinc(II) [Zn(Si₆PP)]; and

5,10,15,20-Tetraphenyl-21*H*,23*H*-porphine [H₂TPP].

109. The device of claim 100, further comprising at least one porphyrin dye that undergoes a detectable color change when exposed to the detectable compound.

110. The device of claim 109, wherein the at least one porphyrin dye is selected from the group consisting of:

2,3,7,8,12,13,17,18,-octafluoro-5,10,15,20-tetrakis (pentafluorophenyl) porphyrinatocobalt (II) [Co(F₂₈TPP)];

2,3,7,8,12,13,17,18,-octabromo-5,10,15,20-tetraphenylporphyrinatozinc(II) [Zn(Br₈TPP)];

5,10,15,20-tetraphenylporphyrinatozinc(II) [ZnTPP];

5(phenyl)-10,15,20-trikis(2',6'-disilyloxyphenyl)porphyrinatozinc(II) [Zn(Si₆PP)]; and.

5,10,15,20-Tetraphenyl-21*H*,23*H*-porphine [H₂TPP].

111. The device of claim 103, further comprising at least one porphyrin dye that undergoes a detectable color change when exposed to the detectable compound.

112. The device of claim 111, wherein the at least one porphyrin dye is selected from the group consisting of:

2,3,7,8,12,13,17,18,-octafluoro-5,10,15,20-tetrakis (pentafluorophenyl) porphyrinatocobalt (II) [Co(F₂₈TPP)];

2,3,7,8,12,13,17,18,-octabromo-5,10,15,20-tetraphenylporphyrinatozinc(II) [Zn(Br₈TPP)];

5,10,15,20-tetraphenylporphyrinatozinc(II) [ZnTPP];

5(phenyl)-10,15,20-trikis(2',6'-disilyloxyphenyl)porphyrinatozinc(II) [Zn(Si₆PP)]; and

5,10,15,20-Tetraphenyl-21*H*,23*H*-porphine [H₂TPP].

113. The device of claim 106, further comprising at least one porphyrin dye that undergoes a detectable color change when exposed to the detectable compound.

114. The device of claim 113, wherein the at least one dye is selected from the group consisting of:

2,3,7,8,12,13,17,18,-octafluoro-5,10,15,20-tetrakis (pentafluorophenyl) porphyrinatocobalt (II) [Co(F₂₈TPP)];

2,3,7,8,12,13,17,18,-octabromo-5,10,15,20-tetraphenylporphyrinatozinc(II) [Zn(Br₈TPP)];

5,10,15,20-tetraphenylporphyrinatozinc(II) [ZnTPP];

5(phenyl)-10,15,20-trikis(2',6'-disilyloxyphenyl)porphyrinatozinc(II) [Zn(Si₆PP)]; and

5,10,15,20-Tetraphenyl-21*H*,23*H*-porphine [H₂TPP].

115. A method for detecting an analyte comprising the steps of:

- a) exposing an analyte-specific compound to an analyte;
- b) producing a detectable compound; and
- c) exposing the detectable compound to at least one porphyrin dye to produce a response, the response being stronger and more distinct than a response of the analyte when exposed to the at least one porphyrin dye.

116. A method for detecting an analyte comprising the steps of:

- a) exposing an analyte-specific compound to an analyte; and
- b) producing a detectable compound, in combination with a given substrate, said detectable compound producing a response when exposed to at least one porphyrin dye, the response being stronger and more distinct than a response of the analyte when exposed to the at least one porphyrin dye.

117. A method for detecting an analyte comprising the steps of:

- a) exposing the analyte to a conjugate, the conjugate comprising an analyte-specific compound conjugated to an enzyme;
- b) exposing the conjugate to a given substrate to produce a detectable compound, the detectable compound producing a detectable response when exposed to at least one porphyrin dye, the response being stronger and more distinct than a response of the analyte when exposed to the at least one porphyrin dye.

118. The method of claim 117, further comprising the step of removing unbound material prior to step b).

119. A method for detecting an analyte comprising the steps of:

- a) exposing the analyte to an analyte-specific compound;

- b) exposing the analyte-specific compound to a conjugate comprising an enzyme and a non-analyte specific compound, the non-analyte specific compound binding to the analyte-specific compound; and
- c) exposing the enzyme to a given substrate to produce a detectable compound, the detectable compound producing a detectable response when exposed to at least one porphyrin dye, the response being stronger and more distinct than a response of the analyte when exposed to the at least one porphyrin dye.

120. The method of claim 119, further comprising the step of removing unbound material prior to steps b) and c).

121. The device of claim 70, wherein the enzyme that is chemically coupled to the analyte-specific compound is directly coupled to the analyte-specific compound.

122. The device of claim 70, wherein the enzyme that is chemically coupled to the analyte-specific compound is indirectly coupled to the analyte-specific compound.

123. The device of claim 80, wherein the enzyme that is chemically coupled to the analyte-specific compound is directly coupled to the analyte-specific compound.

124. The device of claim 80, wherein the enzyme that is chemically coupled to the analyte-specific compound is indirectly coupled to the analyte-specific compound.

125. The device of claim 91, wherein the enzyme directly couples to the analyte-specific compound.

126. The device of claim 91, wherein the enzyme indirectly couples to the analyte-specific compound.

127. The device of claim 100, wherein the enzyme directly couples to the analyte-specific compound.

128. The device of claim 100, wherein the enzyme indirectly couples to the analyte-specific compound.

129. The device of claim 103, wherein the enzyme directly couples to the non-analyte specific compound.

130. The device of claim 103, wherein the enzyme indirectly couples to the non-analyte specific compound.

131. The device of claim 106, wherein the enzyme directly couples to the analyte molecule of the tracer.

132. The device of claim 106, wherein the enzyme indirectly couples to the analyte molecule of the tracer.

133. The method of claim 117, wherein the enzyme directly couples to the analyte-specific compound.

134. The method of claim 117, wherein the enzyme indirectly couples to the analyte-specific compound.

135. The method claim 119, wherein the enzyme directly couples to the non-analyte specific compound.

136. The device of claim 119, wherein the enzyme indirectly couples to the non-analyte specific compound.